

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) An information providing method on a communication network including a server for providing a service, a gateway apparatus and a mobile packet communication network for accommodating mobile terminal and including a service management node for managing management information of the service to be provided to the mobile terminal in the mobile packet communication network, the gateway apparatus being capable of communicating with said mobile terminal, said server and said service management node, the method comprising the steps of:

making a request to set management information on the mobile terminal from said service management node to said gateway apparatus, in an execution process of a procedure for ~~accommodating~~ connecting the mobile terminal to said mobile packet communication network;

registering management information including an address of the terminal and a service identifier of ~~the~~ service to be provided to ~~said the~~ mobile terminal into a management table by said gateway apparatus in response to reception of said request;

checking whether a service request has been sent ~~from the mobile terminal~~ to said server with respect to the service corresponding to the service identifier by said gateway apparatus; ~~and~~

generating, by said gateway apparatus, the service request and sending the service request to the server to start the service when it has been

~~determined that, if the service request has not been sent from the mobile terminal~~
gateway apparatus to said server to start the service;

receiving a packet including service information from said server by
said gateway apparatus; and

transferring said received packet to said mobile packet communication
network by said gateway, using the address of the mobile terminal having
been registered in said management table as a new destination address of
the received packet.

2. (currently amended) The information providing method according to claim 1, wherein said service management node requests said gateway apparatus to set said management information designating at least ~~an~~ the address of said mobile terminal and ~~the~~ said service identifier of the service to be provided to the mobile terminal, and

wherein said gateway apparatus registers said management information including the information designated by said request and attribute information regarding said mobile terminal obtained from other server, into said management table.

Claim 3 (canceled).

4. (currently amended) The information providing method according to claim 1, wherein said gateway apparatus ~~has~~ is provided with, as said management table, a first management table for storing, in correspondence with each service identifier, an address of said server, and

status information indicative of whether the service request has been issued sent to the server or not; and a second management table for storing said management information regarding said mobile terminal, and

wherein when a packet including the service information is received from said server, said gateway apparatus specifies a service identifier corresponding to said received packet with reference to said first management table, searches said second management table for management information including said service identifier to thereby specify ~~an~~ the address of the mobile terminal to which said received packet is to be transferred, and transfers said received packet or a duplicate of said received packet ~~to-with~~ the address of the mobile terminal to said mobile packet communication network.

5. (currently amended) The information providing method according to claim 4, wherein a filtering condition is designated in correspondence with a specific service identifier in said first management table, and

wherein when a packet including service information is received from said server, ~~in the case where~~ and a filtering condition is designated in said first management table in correspondence with the service identifier for the received packet, said gateway apparatus transfers the received packet to said mobile packet communication network by using ~~uses~~ the address of the mobile terminal as a said new destination address of said received packet, ~~if on the premise that~~ the management information of on the mobile terminal stored in said second management table satisfies said filtering condition.

6. (currently amended) The information providing method according to claim 4, wherein said second management table permits registration of a plurality of service identifiers with respect to the same mobile terminal.

7. (currently amended) The information providing method according to claim ~~3~~1, wherein said gateway apparatus converts the destination address of the said received packet received from said server from a global IP address to a local IP address designated by the management information in said management table, and transfers the ~~resultant~~ packet with the local IP address to said mobile packet communication network.

8. (currently amended) An information providing method on a communication network including a server for providing a service, a gateway apparatus and a mobile packet communication network for accommodating a mobile terminal and including a service management node for managing management information ~~of~~ on the service to be provided to the mobile terminal in the mobile packet communication network, said gateway apparatus being communicable with said mobile terminal, said server and said service management node, the method comprising the steps of:

making a request to set management information on the mobile terminal from said service management node to said gateway apparatus by designating a-an address of the mobile terminal ~~address~~ and a service identifier of the service to be provided to ~~said the~~ mobile terminal at the time

of registering location of the mobile terminal in said mobile packet communication network; and

registering the management information regarding said mobile terminal into a management table by said gateway apparatus having received said request;

checking by said gateway apparatus whether a service request has been sent from the ~~mobile terminal~~gateway apparatus to said server with respect to the service to be provided to said mobile terminal; and

when it has been determined that the service request for the mobile terminal has not been sent ~~from the mobile terminal to said server~~, generating, by said gateway apparatus, the request and sending the request to said server to start the service;

receiving a packet including service information from said server by said gateway apparatus; and

transferring said received packet to said mobile packet communication network by said gateway using the address of the mobile terminal having been registered in said management table as a new destination address of said received packet.

9. (currently amended) The information providing method according to claim 8, wherein when said gateway apparatus registers the management information regarding the mobile terminal into ~~a said~~ management table, location information obtained from a location information server for managing geographical local information of the mobile terminal in

said mobile packet communication network is registered as a part of the management information into said management table, and

wherein when a packet designating a delivery area is received from said server, said gateway apparatus refers to said management table to select an the address of a mobile terminal to which said received packet is to be delivered among a group of mobile terminals of which present location is in said designated area, and transfers said received packet to said mobile packet communication network by using said selected address as a new destination address of the received packet.

10. (currently amended) A gateway apparatus communicable with a server for providing a service and a mobile packet communication network for accommodating a mobile terminal and ~~accommodating including~~ a service management node for storing managing management information of the service to be provided to the mobile terminal in the mobile packet communication network, the gateway apparatus comprising:

means for registering management information regarding said mobile terminal into a management table when a setting request of the management information is received from said service management node; and;

means for generating a service request and sending the service request to said server to start the service when it has been determined that if
a service request of corresponding to the service for to be provided to said mobile terminal has not been sent from the mobile terminal to said server; generating, by said gateway apparatus, the service request and sending the service request to said server to start the service; and

packet transferring means for specifying, when a packet including service information is received from said server, ~~an~~the address of ~~a~~said mobile terminal to which the service with said received packet is to be provided, based on said management table and transferring said received packet to said mobile packet communication network by using the address as a new destination address of the received packet.

11. (previously presented) The gateway apparatus according to claim 10, wherein said packet transferring means includes means for receiving a packet including said service information in a multicast packet format from said server and transferring the packet in a unicast packet format to the mobile terminal specified by said management table.

12. (currently amended) The gateway apparatus according to claim 10, wherein said packet transferring means includes means for converting a destination address of ~~a~~said received packet ~~received from said server~~ from a global IP address to a private IP address designated by said management information in said management table, and transferring the ~~resultant received~~ packet with the private IP address to said mobile packet communication network.

13. (currently amended) The gateway apparatus according to claim 10, ~~further comprising:~~wherein said management table comprises:
a first management table for storing, in correspondence with a service identifier, an address of the server for providing the service, and status

information indicative of whether the request for the information service has been ~~issued~~ sent to the server or not; and

a second management table for storing management information regarding said mobile terminal, and

wherein when a packet including the service information is received from said server, said transferring means specifies a service identifier corresponding to said received packet with reference to said first management table, searches said second management table for a management information including said service identifier to thereby specify an address of ~~a~~ the mobile terminal to which said received packet is to be transferred, and transfers said received packet or a duplicate of said received packet with the specified address to said mobile ~~terminal address~~ packet communication network.